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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/723,229	11/26/2003	Wei Fan	YOR920030429US1 (8728-651)	9160
46069	7590	06/19/2006	EXAMINER BELL, CORY C	
F. CHAU & ASSOCIATES, LLC 130 WOODBURY ROAD WOODBURY, NY 11797			ART UNIT 2164	
PAPER NUMBER				

DATE MAILED: 06/19/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/723,229	Applicant(s) FAN ET AL.	
	Examiner Cory C. Bell	Art Unit 2164	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-12 and 15 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☐ Claim(s) 1-12 and 15 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 November 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.


SAM RIMELL
PRIMARY EXAMINER

Attachment(s)

- | | |
|---|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date ____ | 6) <input type="checkbox"/> Other: ____ |

DETAILED ACTION

1. Claims 1-12, and 15 have been examined, as group 1 has been elected.

Response to Arguments

2. The applicants traversal of the restriction is not pervasive.
 - a. As per applicant's accretion that the small number of claims would not be a burden, the claims would require a separate initial search as well as any superceding searches necessitated by the prosecution.
 - b. As per applicants accretion that searching the related subclasses would not be a burden, class 707/3 and 707/2 currently contain 6755 and 2399 patent and pregnant publications respectively.
 - c. As per applicant accretion that the initial reference would likely contain both sets of claims. Even in the case when this would occur it not possibly that this would "undoubtedly" unless a search of each set of claims was complete. Second, in the course of the action any amending away from the initial reference would again require 2 separate searches and increasingly complex prosecution.

Drawings

3. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference character(s) not mentioned in the description: 300. Corrected drawing sheets in compliance with 37 CFR 1.121(d), or amendment to the specification to add the reference character(s) in the description in compliance with 37 CFR 1.121(b) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the

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sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

4. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.
5. Claim 2 objected to because of the following informalities: The claim must end with a period. Appropriate correction is required.

Claim Rejections - 35 USC § 112

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.
7. Claims 1-12 and 15 are rejected under 35 USC 112 2nd Paragraph.
8. *As per claim 1:*

The relationship between "a sequence" on lines 4 and 2 is unclear.

"The index" on line 12 lacks antecedent basis.

"The one or more trie nodes" on line 15 lacks antecedent basis.

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The relationship between “a given trie node” on line 16 and “the one or more trie nodes” in unclear.

The relationship between “trie nodes” and the previous recitations of trie nodes as cited above is unclear.

9. *As per claim 4*, the relationship between “a trie structure: on line 6 of claim 4 and lines 10-11 in claim 1 is unclear.

10. *As per claims 5-7*, these claims are unclear as what limitation modifies which feature and what feature comprises the new limitations.

11. *As per claims 9*, “the symbol elements” lacks antecedent basis.

12. *As per claim 10*, the relationship between “a trie structure: on line 4 in claim 10 and lines 10-11 in claim 1 is unclear.

13. *As per claim 11*, the relationship between “a trie structure: on line 9 in claim 11 and lines 10-11 in claim 1 is unclear and the relationship between “one or more new sequences” on line 10 and “a new sequence” in claim 10 is unclear.

14. *As per claim 12*, the “a sequence” relationship is unclear, see claim 1 rejection. The introduction of “one or more sequence” should be one or more sequences.

15. *As per claim 15*, it contain error similar to those listed in the rejection of claim 1.

Claim Rejections - 35 USC § 101

16. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claim 15 is rejected under 35 U.S.C. 101 because it pertains to software *per se*. The fact that the instruction are for execution by a processor does not mean that the instructions are

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processed. Thus, claim 15 cannot produce a useful concrete and tangible result if the instructions are not executed, as not result will be produced.

Claim Rejections - 35 USC § 102

17. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

18. Claims 1-12 and 15 rejected under 35 U.S.C. 102(a) as being Clearly Anticipated by “Indexing Weighted-Sequences in Large Databases”.

19. *As per Claims 1 and 15,*

receiving a sequence; {Section 3 “Weighted Sequences”}

receiving a window size; {Section 5.1 Para 2}

encoding the sequence into a weighted-sequence; {Section 3}

encoding the weighted sequence into one or more one-dimensional sequences; {Section 5.2 Para 3} wherein the length of each of the one or more one-dimensional sequences is less than the window size; {Section 5.2 Para 2} inserting each of the one or more one-dimensional sequences into a trie structure; {Section 5.2 Para 5}

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and generating the index, comprising:

generating a current sequential ID and a maximum sequential ID pair for generating each of the one or more trie nodes, wherein the current sequential ID of any descendant of a given trie node is between the current sequential ID of the given trie node and the maximum sequential ID;

{Section 5.2 Para 6}

generating an iso-depth link for each unique symbol in each of the one or more one-dimensional sequences, {Section 5.2 Para 8} wherein the iso-depth link comprises trie nodes under the symbol; {Section 5.2 Para 8 and Section 5.2 Paras 1 and 2} and

generating an offset list comprising an original position of each of the one or more subsequences in the weighted-sequence. {Section 5.2 Para 5}

20. *As per Claim 2,*

2. The method of claim 1, wherein encoding the sequence into a weighted-sequence comprises encoding the sequence with weights represented by real numbers; {Section 5.1 Para 3}

21. *As per Claim 3,*

3. The method of claim 2, wherein encoding the sequence with weights represented by real numbers, comprises discretizing the sequence into a number of equi-width units. {Section 5.1 Para 3}

22. *As per Claim 4,*

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4. The method of claim 1, wherein inserting each of the one or more one-dimensional sequences into a trie structure comprises using a depth-first traversal. {Section 5.2 Para 6}

23. *As per Claims 5-7,* They are rejected as best understood, in view of section 5.2 Para 8 And Section 5.3

24. *As per Claim 8,*

8. The method of claim 1, wherein receiving a sequence comprises receiving one or more elements in the sequence, wherein each of the one or more elements are represented by one or more (symbol, weight) pairs. {Section 3 Para 5}

25. *As per Claim 9,*

9. The method of claim 8, wherein receiving one or more elements in the sequence, wherein each of the one or more elements are represented by one or more (symbol, weight) pairs, and wherein each of the symbol elements of the one or more (symbol, weight) pairs correspond to a non-uniform frequency distribution. {Section 1 “Our Contributions” 3rd bullet point}

26. *As per Claim 10,*

10. The method of claim 9, further comprising reordering the one or more one-dimensional sequences prior to inserting each of the one or more one-dimensional sequences into a trie structure using the non-uniform frequency distribution to generate a new sequence. {Section 1 “Our Contributions” 3rd bullet point}

27. *As per Claim 11,*

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11. The method of claim 10, wherein reordering the one or more one-dimensional sequences prior to inserting each of the one or more one-dimensional sequences into a trie structure using the non-uniform frequency distribution to generate one or more new sequences, comprises: (a) adding an offset $2*w*r$ to each weight element of the one or more one-dimensional sequences, wherein w is a window size, r is a rank a symbol to generate a new weight; (b) sorting the each element of the one or more one-dimensional sequences by the new weight; (c) placing a moving window of size $2*w*A$ on the one or more new sequences, wherein A is the total number of the symbols; and (d) indexing the one or more new sequences in a new window. {Section 6 Para 9}

28. *As per Claim 12,*

12. The method of claim 1, wherein receiving a sequence comprises receiving one or more scientific datasets, transforming each of the one or more scientific datasets into one or more sequence, concatenating the one or more sequences to form a long sequence. {Section 4}

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Cory C. Bell whose telephone number is (571) 272 2736. The examiner can normally be reached on m-f 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Charles Rones can be reached on (571) 272 4085. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



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